

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of the Claim

Claims 1 -76 (canceled)

Claim 77 (New) An inhibitor that has about 15 fold to about 15,000 fold greater selectivity for a mutant enzyme as compared to its selectivity for the corresponding wild-type enzyme, wherein the mutant enzyme comprises the amino acid sequence of the wild-type enzyme, except the mutant enzyme comprises amino acid mutations in its catalytic domain.

Claim 78 (New) An inhibitor of claim 77, wherein the inhibitor has about 100 fold greater selectivity for the mutant enzyme as compared to its selectivity for the corresponding wild-type enzyme.

Claim 79 (New) An inhibitor of claim 77, wherein the inhibitor has about 400 fold greater selectivity for the mutant enzyme as compared to its selectivity for the corresponding wild-type enzyme.

Claim 80 (New) An inhibitor of claim 77, wherein the inhibitor has about 1000 fold greater selectivity for the mutant enzyme as compared to its selectivity for the corresponding wild-type enzyme.

Claim 81 (New) An inhibitor of claim 77, wherein the inhibitor has about 6500 fold greater selectivity for the mutant enzyme as compared to its selectivity for the corresponding wild-type enzyme.

Claim 82 (New) An inhibitor of any one of claims 77 to 81, wherein the inhibitor is a pyrazolopyrimidine.

Claim 83 (New) An inhibitor of any one of claims 77 to 81, wherein the enzyme is a kinase.

Claim 84 (New) An inhibitor of claim 83, wherein the kinase is a protein kinase.

Claim 85 (New) An inhibitor of claim 84, wherein the protein kinase is selected from the group consisting of v-Src, Fyn, c-Abl, CAMK II α , CDK2, Cdc28, and Fus3.

Claim 86 (New) An inhibitor of claim 85, wherein the mutant protein kinase is selected from the group consisting of V323A v-Src, I338A v-Src, I338G v-Src, V323A I338A v-Src, V323A I338G v-Src, T339G Fyn, T315A Abl, F89G CAMK II α , F80G CDK2, Cdc28-as1, and Fus-as1.

Claim 87 (New) An inhibitor of any one of claims 77 to 81, wherein the catalytic domain is the ATP binding site.

Claim 88 (New) An inhibitor of claim 87, wherein the ATP binding site comprises a single amino acid mutation.

Claim 89 (New) An inhibitor of claim 88, wherein the amino acid mutation is at a residue that corresponds to position 21 of SEQ ID NO: 3 (position 338 of v-Src) or to position 6 of SEQ ID NO: 3 (position 323 of v-Src).

Claim 90 (New) An inhibitor of claim 87, wherein the ATP binding site comprises two or more amino acid mutations.

Claim 91 (New) An inhibitor of claim 90, wherein the amino mutations are at residues that correspond to position 6 of SEQ ID NO: 3 (position 323 of v-Src) and position 21 of SEQ ID NO: 3 (position 338 of v-Src).

Claim 92 (New) An inhibitor of any one of claims 77 to 81, wherein the inhibitor inhibits a catalytic activity of the mutant enzyme with an IC_{50} of less than about 200 nM.

Claim 93 (New) An inhibitor of any one of claims 77-81 wherein the inhibitor is a methyltransferase inhibitor.

Claim 94 (New) A method of inhibiting a catalytic activity of a mutant enzyme comprising contacting the mutant enzyme with an inhibitor of claim 77.

Claim 95 (New) A method of inhibiting the growth of a cell that expresses a mutant enzyme comprising contacting the cell with an inhibitor of claim 77.

Claim 96 (New) A method of disrupting transformation in a cell that expresses a mutant enzyme comprising contacting the cell with an inhibitor of claim 77.

Claim 97 (New) A method of inhibiting phosphorylation of a substrate of a mutant enzyme comprising incubating an inhibitor of claim 77 with a mixture comprising the mutant enzyme and its substrate.

Claim 98 (New) A method of any one of claims 94-97, wherein the mutant enzyme is a mutant protein kinase.

Claim 99 (New) A method of claim 98, wherein the mutant protein kinase is of the Src family

Claim 100 (New) A method of claim 99, wherein the mutant protein kinase is a mutant v-Src or mutant Fyn.

Claim 101 (New) A method of claim 100, wherein the mutant v-Src is I338G v-Src.

Claim 102 (New) A method of claim 101, wherein the mutant Fyn is T339G.

Claim 103 (New) A method of claim 98, wherein the mutant protein kinase is selected from the group consisting of mutant c-Abl, mutant CAMK II α , mutant CDK2, mutant Cdc28, and mutant Fus3.

Claim 104 (New) A method of claim 103, wherein the mutant protein kinase is selected from the group consisting of T315A Abl, F89G CAMK II α , F80G CDK2, Cdc28-as1, and Fus-as1.